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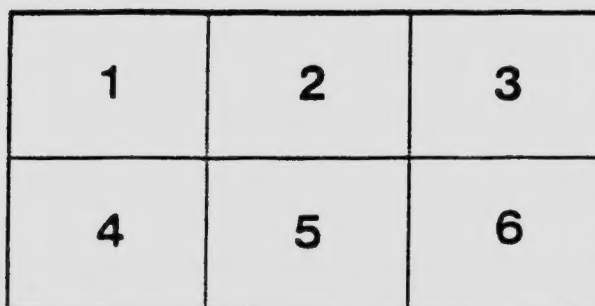
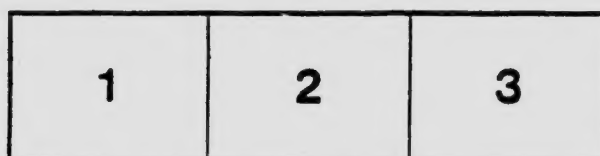
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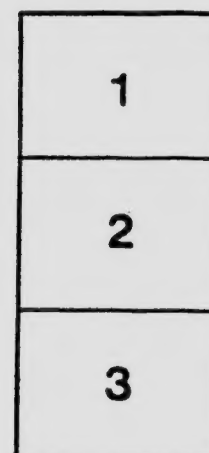
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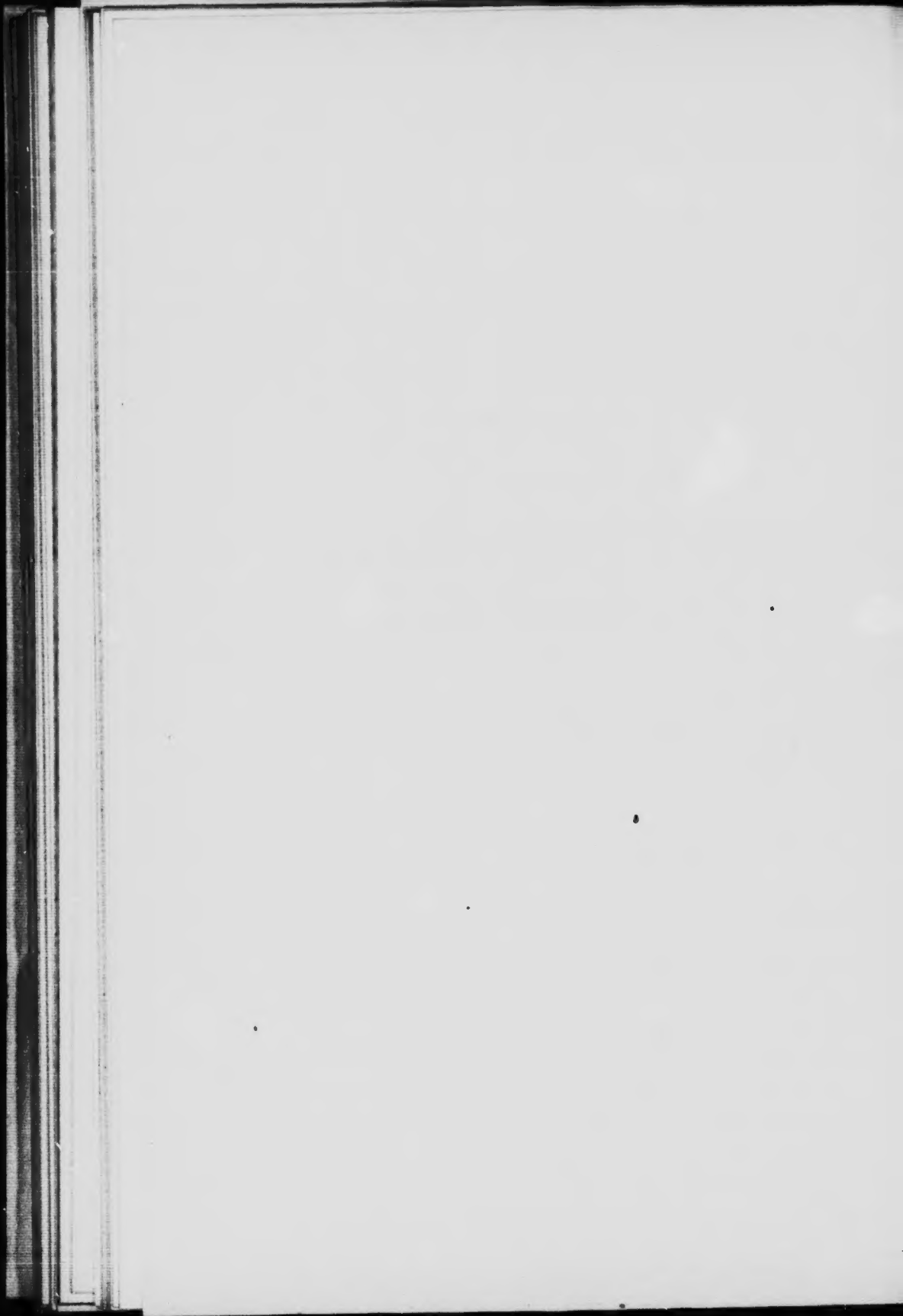
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LABORATORY
OF RE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA

BULLETIN No. 107

DOMESTIC BUTTER



LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
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BULLETIN No. 107.

DOMESTIC BUTTER.

LABORATORY OF THE INLAND REVENUE DEPARTMENT,
317 QUEEN ST.,
OTTAWA, ONT., September 11, 1905.

W. J. GERALD, Esq.,
Deputy Minister of I. R. D.

DEAR SIR: I have the honour to hand you a report upon domestic butter, i.e., butter as found in the retail market, and intended for home consumption. This report comprises the results of the analysis of one hundred and eighty (180) samples, collected under your authorization in July last.

It is regrettable that owing to delay on the part of Lyman Sons and Co. of Montreal in supplying containers to our inspectors, no samples were collected in the districts of Nova Scotia, New Brunswick and Prince Edward Island. In each of the remaining (nine) districts, twenty samples were collected.

The work of analysis has been done in this laboratory and I have to acknowledge valuable assistance on the part of Mr. Valin and Miss Wright.

Most of these samples are farm made butters, and many of the vendors were unable to trace samples to their origin. Nineteen of the samples are designated as 'Creamery made'.

We hear so much about the presence of borax and boracic acid in Export Canadian butter, that it is very surprising to find only one of the samples included in this report, containing this preservative. The sample in question (No. 18, Montreal) was purchased from Ewan Bros., 376 St. Antoine St., Montreal, but its maker is unknown.

In further corroboration of the absence of borax, in domestic butter, I caused eleven (11) samples of creamery butter as supplied to the Ottawa market, and representing as

many different makers, to be specially examined. Farm made butters being apparently quite free from borax, I wished to know whether the preservative was used by the larger creameries. The following results were obtained with these samples.

Creamery.	Vendor	Borax.
A—Maxville (Edwards Creamery Co.)	McGregor	Present.
B—Rising Sun (North Wakefield)	"	"
C—Golden Leaf	Scott	None.
D—Renfrew	Bate	Present.
E—Aldernay (Wellington St.)	Bryson & Graham	None.
F—Arnprior	Moreland	"
G—Hillbrook (Prescott)	Lindsay	"
H—Laurentian (N. Nation Mills)	Bate	"
I—Royal (East Templeton)	"	"
K—Ottawa Cold Storage	Matthews	"
L—Favorite	Ottawa Dairy Co.	"

Thus it appears that three (3) out of eleven creameries supplying butter to Ottawa use borax. It is noteworthy that No. 25472 (No. 1, Kingston), said to be Renfrew creamery, contains no borax.

I do not wish at this time to raise the question of the desirability of employing borax in butter. There is certainly no legal objection to its use. But it is a highly interesting fact, that Canadian farm-made butter is free from borax, and that even creamery-made butter contains it quite exceptionally.

The last extensive examination of butter under the Food Act, was made in this laboratory in 1890. At that time (See Bull. 16), 150 samples were analysed; the examination having special regard to the possible presence of foreign fat (Oleo-margarine).

In the present instance the numbers tabulated under 'Refractometer,' indicate that no foreign fat exists in any of the samples now reported. It may be explained that the refractive index of the butter fat is observed at temperature above the melting point of the fat. The exact temperature of observation need not be known, since the figure found is checked by a specially graduated thermometer whose scale shows the mean reading for genuine butter fat at the temperature of observation. This number is entered in the table under the caption 'Normal,' while the observed reading is placed beside it, in the column headed 'Found.' A difference of about one unit, is permissible, owing to variations in the constitution of genuine butter fat, and to incipient rancidity.

The question of the amount of water which may legitimately be present in butter has often been discussed. In 150 samples examined in 1890, the mean water percentage was 8.97. A very careful study of the amount of water present in Canadian Creamery butter was made by Mr. Shutt, Chemist of the Experimental Farms, in 1902. Of 105 samples examined, only two showed more than 15 per cent water; only one sample exceeded 16 per cent; and ninety-two samples fell below 14 per cent. Sixteen per cent of water is, I believe, the limit fixed by English law, for imported butter. It will be seen that only one sample (No. 14, St. Hyacinthe) exceeds this amount. Only eight (8) samples exceed 14 per cent of water, while 114 samples contain less than 10 per cent.

The salt present has been determined by estimating the chlorine, and is therefore slightly below the quantity actually used for two reasons.

1st.—Commercial salt is not pure chloride of sodium, but contains traces of sulphates, etc.

2nd.—No allowance is made for the hygroscopic moisture in commercial salt. This last may frequently reach 10 per cent of its weight.

The demand for *fresh* butter, i. e., butter containing but little salt, is evidenced by the low percentage of salt found. In 1890 the salt content varied from 15.16 per cent to 1.0 per cent, the average amount being 5.15 per cent. In the present collection the average amount of salt is about 3.5 per cent.

The numbers given under 'Curd' are obtained by subtracting the 'salt' from the 'non-fat solids.' Since the former number is somewhat low, for reasons just given, the 'Curd' percentage will be correspondingly higher than the truth. The keeping qualities of a butter (apart from the addition of antiseptics) depend largely upon the completeness with which the curd is removed. This is effected by 'Working' the butter. A too complete removal of the curd, however, injures the taste of the butter, and as the public demands a table butter of distinct aroma and taste, the tendency will be to reduce the so called 'working' of the butter to a minimum, and to depend upon cold storage and the addition of preservatives to give it keeping quality.

It was proposed by Dr. Vieth of the Aylesbury Dairy Company, London, England, in 1890, that no butter offered for sale should contain less than 80 per cent of butter fat. Judged by this standard, seven (7) samples of the present collection would be condemned, as follows:—

No. 14—St. Hyacinthe.....	78.60	Butter fat.
" 1—Montreal.....	77.38	"
" 4— ".....	79.38	"
" 18— ".....	79.32	"
" 11—Kingston.....	79.78	"
" 12— ".....	79.72	"
" 17—London.....	79.84	"

It is, however, to be added that 113 samples (= 63 %) contain more than 85 per cent of butter fat.

I would respectfully recommend the publication of this Report as Bulletin 107.

I have the honour to be, sir,

Your obedient servant,

A. McGILL,

Acting Chief Analyst.

TABLE I.—DOMESTIC BUTTER—JULY, 1905

Date of Collection.	Collector's Number.	Serial Number.	Name and Address of Vendor.	Cost per lb.	Name and Address of Manufacturer or Furnisher, when known.
			<i>District of Quebec—C. E. Roy, Inspector.</i>	\$ cts.	
Aug. 10	27537	1	Timothé Goudreau, Limoulou	0 20	Damase Rouleau, Quebec.
" 10	27538	2	E. P. Bérubé, Limoulou	0 22	Bill Devine, Stoneham.
" 11	27539	3	G. G. Devarennos et Cie, Rue St. Vallier, Place sans Bruit, Quebec.	0 24	Not known.
" 11	27540	4	J. E. Rousseau, Rue St. Vallier, Place sans Bruit, Quebec.	0 21	David McKinley, Valcartier.
" 11	27541	5	Jos. Bloin, 90 Rue St. Sauveur, St. Malo, Que.	0 22	Not known.
" 12	27542	6	J. Pepin, 132 Rue Massue, St. Sauveur, Que.	0 22	Thom. Knox, Valcartier.
" 12	27543	7	Leo. Vidal, 146 Rue Bayard, St. Sauveur, Que.	0 24	Alf. Marceau, St. Anselme.
" 12	27544	8	J. A. Lachance, 133 Rue Charest, St. Roch.	0 25	Ed. Côté, Quebec.
July 24	27532	9	Lepage & Godbout, Chicoutimi	0 19	M. Gagné, St. Jérôme.
" 24	27533	10	Bouchard & Michaud	0 20	Taddy Tremblay, St. Fulgence.
" 26	27534	11	M. Turgeon, Lévis	0 22	M. Bergeron, St. Nicholas.
" 19	27525	12	Jean Drolet, 41 Marché Champlain ..	0 18	M. Kelly, Inverness.
" 19	27526	13	" " " " " " " " " " " "	0 22	Theodule Paquet, St. Nicholas.
" 20	27527	14	L. Mercier et Cie, 1157 St. Paul, Que.	0 20	Capt. Lesvéque, Isle Verte.
" 27	27536	15	" " " " " " " " " " " "		
" 27	27535	16	" " " " " " " " " " " "		
" 20	27528	17	J. A. Poliquin, Montmagny	0 18	Henri Laverdière, Notre Dame du Rosaire.
" 21	27529	18	A. Maurais, Ste. Anne de la Pocarière.	0 18	France Ligott, St. Onésime.
" 22	27530	19	J. O. Giard, Rivière du Loup	0 22	Ex-chariote Belanger, St. Antoine.
" 22	27531	20	P. O. L. J. Ouellet, Rivière du Loup	0 23	Theodule Chouinard, St. Maurice.
			<i>District of St. Hyacinthe—J. C. Rouleau, Inspector.</i>		
July 19	24741	1	G. E. Brown, Pt. Fortune	0 20	B. Chouinillard, St. Thomas de Rigaud.
" 19	24742	2	Mde L. Landry, Buckingham	0 22	Arsele Reau, near Buckingham.
Aug. 20	24743	3	J. L. Richard, St. Jérôme	0 20	Thos. Bova, Mille Isle.
" 30	24744	4	Wm. Stafford, Joliette	0 18	Neuse rappelle pas.
" 30	24745	5	Paul Clement, St. Gabriel	0 24	Emery Rondeau, St. Gabriel de B.
Sept. 1	24746	6	Louis Hamel, Nicolet	0 24	Proulx & frères, Nicolet.
" 1	24747	7	Ed. Marchand "	0 24	V. Gelinas, St. Gregoire, de Nicolet.
Aug. 9	24728	8	Guillet & Menard, Farnham	0 18	D. Hatherington, St. Bridgette.
" 9	24729	9	J. B. Nadeur, Farnham	0 24	Jos. Potvin, Farnham.
" 9	24730	10	Jos. Gagné, Sherbrooke	0 22	J. Broadbill, Orford.
" 9	24731	11	S. Fortier, East Sherbrooke	0 25	M. McCallister, Sherbrooke.
" 9	24732	12	Hiron & Blouin, East Sherbrooke ..	0 22	F. A. Bourque " "
" 14	24733	13	O'Carrihan et fils, Trois Rivières ..	0 22	Gunn, Langlois et Cie, Montreal.
" 14	24734	14	Louis Bum Ile et frères	0 23	W. E. Clement, Trois Rivières.
" 15	24735	15	P. C. Lemoine, Sorel	0 25	A. Magnan, Sorel.
" 15	24736	16	A. Francoeur et Cie, Sorel	0 20	Hislop & Hunter, Montreal.
" 22	24737	17	A. Brassard, Laprairie	0 24	J. E. Larocche, St. Philippe.
" 25	24738	18	Richer & Daoust, Valleyfield	0 23	Howard & Co., Eganville.
" 23	24739	19	Seguin & Courville "	0 23	Green, Langlois & Co., Montreal.
" 23	24740	20	L. Bourbonnais, Coteau Landing	0 25	Georgius Bourbonnais, Coteau Landing.
			<i>District of Montreal—J. J. Costigan, Inspector.</i>		
Aug. 1	26644	1	C. H. Poudrier, Bonsecours Market ..	0 25	Gunn & Langlois, Montreal.
" 1	26645	2	" " " " " " " " " " " "	0 22	Not known.
" 1	26646	3	R. J. Smith, Bonsecours Market	0 24	Hugh Allan, Montreal.
" 1	26647	4	" " " " " " " " " " " "	0 20	White Packing Co., Montreal.
" 1	26648	5	N. Ethier "	0 23	Not known.
" 1	26649	6	" " " " " " " " " " " "	0 20	" "

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TABLE I.—DOMESTIC BUTTER—JULY, 1905—*Continued.*

Date of Collection.	Collector's Number.	Serial Number.	Name and Address of Vendor.	Cost per lb.	Name and Address of Manufacturer or Furnisher, when known.
<i>District of Toronto—Con.</i>				\$ cts.	
July 19	25476	12	W. A. Sherwood & Co., St. Paul Street, St. Catharines.	0 24	Not known.
" 20	24852	13	F. W. Fearman & Co., McNab St., Hamilton.	0 24	J. Malcolm & Son.
" 20	24853	14	Peebles, Hobson & Co., King, St. W. Cor. McNab and Hamilton Sts.	0 25	Mrs. Main, Hagersville.
" 20	24854	15	W. H. Ryckman & Co., 16 McNab St., Hamilton.	0 25	St. Mary's Creamery Co.
" 20	24855	16	W. H. Ryckman & Co., 16 McNab St., Hamilton.	0 22	Gibson, Grand River.
July 20	24856	17	W. H. Ryckman & Co., 16 McNab St., Hamilton.	0 17	Nelson Creamery.
" 20	24857	18	W. R. Budge, McNab, cor. Market St., Hamilton.	0 22	Not known.
" 20	24858	19	Fowler Canadian Co., Market Hall, Hamilton.	0 22	M. A. Valeur, Beverly.
" 20	24859	20	W. C. Hoover, Market Hall, Hamilton.	0 22	Mrs. T. Reid, Hagersville.
<i>District of London—T. Kidd, Inspector.</i>					
June 22	22300	1	J. J. McEwen, Goderich.....	0 16	M. Taggart, Colbourn Township.
" 23	22305	2	James Canning, Dublin.....	0 16	Mrs. John Patric, Hibbert Township.
" 22	22302	3	T. S. Ford & Co., Mitchell.....	0 16	Mrs. Robt. Rooney " "
" 22	22297	4	Cantelon Bros., Clinton, Ont.....	0 16	R. McClennol, Clinton.
" 26	22310	5	Edward O'Flaherty, Stratford.....	0 17	Mrs. M. J. Crowley, Ellis Township.
" 26	22313	6	John Gray, St. Mary's.....	0 16	Mrs. Muxworth, Fullerton Township.
" 27	22318	7	F. G. Murphy, 246 Dundas St., London.	0 18	Mrs. Hodgins Birr, London.
" 27	22321	8	C. A. O'Neill, Ingersoll.....	0 20	J. W. Harrison, Dearham Township.
" 28	22323	9	Pool & Co., Woodstock.....	0 20	S. Laurence, Oxford Township.
" 28	22327	10	R. V. Vair.....	0 15	Noble Dickinson, Norwich.
July 6	22334	11	Dunke & Co., Berlin.....	0 18	Mr. Nathin Clemmer, Waterloo Tp.
" 7	22342	12	A. G. Fitzsimons, Guelph.....	0 15	Mrs. Lush, Guelph.
" 7	22345	13	Benson Bros., Guelph.....	0 16	Mrs. McCrea, Guelph Township.
" 7	22347	14	J. M. Dooley, Guelph.....	0 16	Mrs. Black " "
" 7	22351	15	John Stone, Galt.....	0 20	George Kitcher, St. Georges.
" 10	22354	16	McKay Bros., Georgetown.....	0 15	Mrs. Wm. Hoare, Georgetown.
" 11	22356	17	D. J. Downey, Alliston.....	0 15	Mrs. Pennilton, Mulmer Tp.
" 12	22359	18	George E. Reynolds, Boston.....	0 16	Mrs. Ramsey, Tecumsetts Tp.
" 13	22363	19	William Hammell, Tottenham.....	0 16	Mrs. Wm. King " "
" 14	22365	20	McBride & Gillespie, Orangeville.....	0 16	T. J. Henery, Caledon Tp.
<i>District of Winnipeg—W. M. Conklin, Inspector.</i>					
Aug. 4	25524	1	Otto Schultz, Gretna.....	0 20	Not known.
" 5	25528	2	J. T. Brett, Kenora.....	0 25	R. Gould, Kenora.
" 5	25529	3	H. E. Hook & Co., Kenora.....	0 25	Merrick Bros., McGregor, Man.
" 8	25533	4	The Retail Co., Morden.....	0 15	Not known.
" 8	25534	5	T. H. Heinman, Morden.....	0 15	" "
" 8	25535	6	P. A. Young & Co., Crystal City...	0 15	" "
" 8	25537	7	J. G. McLean & Co., Pilot Mound...	0 15	" "
" 9	25539	8	W. Pennington, Cartwright.....	0 15	" "
" 10	25541	9	F. J. Messens, Holmfield.....	0 15	" "
" 10	25542	10	Jones Bros., Nings.....	0 15	" "
" 11	25544	11	McAllister & Robinson, Boissevain..	0 15	" "
" 15	25545	12	G. McClure, Carman.....	0 15	" "
" 15	25546	13	G. D. Raymond, Carman.....	0 15	" "
" 15	25547	14	A. E. Hill Co., Carman.....	0 18	" "
" 16	25548	15	W. Noble, Glenboro'.....	0 15	" "
" 16	25549	16	J. F. Fumerton, Glenboro'.....	0 15	" "
" 16	25550	17	Wm. Dickson, Holland.....	0 15	" "

TABLE I.—DOMESTIC BUTTER—JULY, 1905—*Continued.*

Date of Collection.	Collector's Number.	Serial Number.	Name and Address of Vendor.	Cost per lb.	Name and Address of Manufacturer or Furnisher, when known.
			<i>District of Winnipeg—W. M. Conklin, Inspector.—Con.</i>	\$ cts.	
Aug. 16	25551	18	W. F. Schooley, Holland	0 15	Not known.
" 17	25552	19	McRory & McCosh, Souris	0 20	"
" 17	25553	20	A. E. Brindle, Souris	0 15	"
			<i>District of Calgary—W. Fletcher, Inspector.</i>		
July 18	21800	1	Hatfield & McSaren, Calgary	0 20	Charles Ostrom, Calgary District.
" 18	21801	2	Brown & Knight "	0 20	F. C. Brook, Langdon.
" 22	21812	3	A. S. Cameron "	0 20	Joseph Robinson, Calgary Dist.
" 22	21817	4	Hudson Bay Co. "	0 20	Mrs. A. Rodgers "
" 22	21819	5	Calgary Milling Co. "	0 20	F. Moorehouse "
" 25	21821	6	Star Trading Co., Wetaskiwin	0 15	H. H. Millar, Wetaskiwin.
" 25	21824	7	Compton & Montgomery "	0 15	Not known.
" 25	21828	8	N. W. Gould "	0 20	"
" 25	21832	9	A. R. Dickson "	0 20	G. T. Thorson, Wetaskiwin.
" 27	21838	10	Hudson Bay Co., Edmonton	0 20	Mrs. Fielders, Poplar Lake, Alta.
" 27	21843	11	Revillon Bros. "	0 20	A. D. Wilson, Nanaimo, Alta.
" 27	21848	12	McDougall & Secord "	0 20	John J. Bell, Horse Hills, Alta.
" 27	21853	13	Williamson Bros. "	0 20	Mrs. Macnamara, St. Alb rt, Alta.
" 27	21855	14	Joe Morris "	0 20	M. Ulmar, Stoney Plain, Alta.
" 27	21856	15	The Whitelaw Co. Sta., Edmonton ..	0 20	Mrs. Joe Wilson, Belmont, Alta.
" 28	21860	16	C. Sugarman, Strathcona ..	0 20	Andrew Klapstein, Ellerslie, Alta.
" 28	21865	17	J. P. Malone "	0 20	Ira Fulton, Strathcona.
" 28	21870	18	Douglas Bros. "	0 20	Mrs. Sutherland, Strathcona.
" 28	21872	19	A. H. Richards & Co., Strathcona ..	0 20	C. Chambers, Cooking Lake, Alta.
" 28	21875	20	D. L. Ghormley "	0 20	A. McLeod, Rabbit Hills, Alta.
			<i>District of British Columbia—E. B. Parkinson, Inspector.</i>		
June 27	26913	1	Webster Bros., Vancouver	0 25	M. Finseth, Bardo, Alberta.
" 27	26914	2	" "	0 25	F. West, Agassiz, B. C.
" 27	26915	3	" "	0 25	Richmond Dairy Co., Vancouver.
" 27	26918	4	H. O'Lea "	0 25	Not known.
" 27	26922	5	J. P. Nightingale "	0 25	Maple Leaf Creamery, Ont.
" 28	26924	6	S. T. Wallace "	0 25	The Chiliwack Creamery, Chiliwack, B. C.
" 28	26927	7	LaBelle & Co. "	0 30	McCullough Bros., Montreal.
" 28	26932	8	C. Charters "	0 25	Griffin & Co., Vancouver.
" 29	26935	9	F. Wright "	0 25	" " "
July 4	26938	10	W. T. Heddle, Nanaimo, B. C.	0 25	A. McMillan, Denman Island, B. C.
" 6	26951	11	Victoria Co-operative Assn., Ltd., Yates St., Victoria, B. C.	0 30	Victoria Creamery, Victoria.
" 6	26952	12	Fred. Carne, cor. Yates & Broadway, Victoria.	0 25	" " "
" 6	26958	13	G. W. Robinson, Douglas St., Victoria.	0 25	The Cowichan Creamery, Victoria, B. C.
" 6	26960	14	The Saunders Grocery Co., Ltd., Johnston St., Victoria, B. C.	0 25	Comox Creamery Assn., Courtney, B. C.
" 7	26962	15	West End Grocery Co., Ltd., Govt. St., Victoria.	0 25	Albermi Creamery Assn., Albermi, B. C.
" 7	26963	16	The Windsor Grocery Co., Govt. St., Victoria.	0 30	The Delta Creamery Co., Ltd., Ladner, B. C.
" 5	26944	17	Geo. Bevilcockway, Nanaimo	0 30	The Nanaimo Creamery Assn., Ltd., Nanaimo, B. C.
Aug. 18	28015	18	Foran Bros., Vancouver	0 15	Chiliwack Creamery.
" 18	28017	19	Geo. Wagg "	0 20	A. McCullough, Montreal.
" 18	28021	20	W. Clark "	0 30	Eden Bank Creamery.

TABLE II.—DOMESTIC BUTTER—JULY, 1905—*Continued.*

District.	Serial Number.	Collector's Number.	Water.	Non-fat Solids.	Fat.	Sodium Chloride.	Borax or Boracic Acid.	REFRACTOMETER.		Curd.
								Normal.	Found.	
Quebec.....	1	27537	p.c. 10.16	p.c. 7.10	p.c. 82.74	p.c. 3.56	None...	48.1	48.5	p.c. 3.54
	2	27538	9.64	5.60	84.76	3.40	"	46.6	47.8	2.20
	3	27539	9.10	6.20	84.70	4.25	"	46.9	46.9	1.95
	4	27540	11.90	3.70	84.40	2.29	"	47.8	47.9	1.41
	5	27541	6.06	3.80	90.14	2.29	"	48.0	48.0	1.51
	6	27542	7.08	3.70	89.22	1.92	"	48.3	48.9	1.78
	7	27543	11.78	3.08	85.14	2.16	"	46.8	48.0	0.92
	8	27544	13.12	4.18	82.70	2.80	"	47.1	47.0	1.38
	9	27532	7.96	2.08	89.96	1.14	"	47.1	46.9	0.94
	10	27533	6.76	6.90	86.34	3.14	"	45.8	45.0	3.76
	11	27534	9.48	5.70	84.82	4.40	"	46.5	46.1	1.30
	12	27525	14.56	4.20	81.24	3.40	"	48.7	48.0	0.80
	13	27526	9.24	3.70	87.06	3.11	"	48.2	48.0	0.56
	14	27527	8.76	5.14	86.10	2.59	"	47.0	47.0	2.55
	15	27536	5.72	6.20	88.08	2.89	"	46.2	46.0	3.31
	16	27535	12.22	4.24	83.54	2.54	"	47.8	47.5	1.70
	17	27528	8.66	4.48	86.86	3.65	"	47.6	47.0	0.83
	18	27529	8.54	4.90	86.56	2.55	"	47.8	46.7	2.35
	19	27530	12.46	4.00	83.54	2.55	"	46.0	46.0	1.45
	20	27531	14.20	4.80	81.00	2.04	"	45.3	45.0	2.76
St. Hyacinthe.....	1	24741	13.30	4.88	81.82	2.72	"	46.5	46.2	2.16
	2	24742	11.28	3.68	85.04	1.86	"	47.3	47.0	1.82
	3	24743	8.80	5.71	85.49	4.50	"	47.1	47.0	1.21
	4	24744	11.70	3.70	84.60	2.10	"	47.1	47.2	1.60
	5	24745	8.40	4.10	87.50	2.80	"	48.0	47.9	1.30
	6	24746	8.50	3.20	88.30	1.70	"	47.7	47.6	1.50
	7	24747	13.00	4.10	82.90	2.10	"	47.2	47.4	2.00
	8	24728	6.20	2.90	90.90	2.46	"	46.7	46.0	0.44
	9	24729	7.90	3.38	88.72	2.30	"	49.0	50.0	1.08
	10	24730	10.00	3.20	86.80	2.46	"	46.9	46.0	0.74
	11	24731	9.74	4.42	85.84	3.38	"	47.2	47.0	1.04
	12	24732	7.34	4.50	88.16	3.30	"	49.0	50.0	1.20
	13	24733	11.00	4.00	85.00	3.31	"	47.1	47.2	0.69
	14	24734	18.16	3.24	78.60	2.55	"	47.2	47.2	0.69
	15	24735	10.32	3.00	86.68	2.21	"	47.3	47.0	0.79
	16	24736	12.40	4.70	82.90	4.59	"	47.4	47.0	0.11
	17	24737	13.20	4.10	82.70	2.90	"	47.4	47.1	1.20
	18	24738	8.50	6.42	85.08	4.82	"	46.3	46.0	1.60
	19	24739	8.28	4.22	87.50	2.90	"	46.7	46.8	1.34
	20	24740	12.04	6.40	81.56	3.48	"	47.0	47.2	2.92
Montreal.....	1	26644	13.12	9.50	77.38	6.46	"	46.2	46.0	3.04
	2	26645	9.16	4.88	85.96	3.65	"	47.6	47.6	1.23
	3	26646	11.36	7.90	80.74	7.02	"	46.8	46.0	0.88
	4	26647	15.06	5.56	79.38	3.31	"	46.0	46.0	2.25
	5	26648	13.54	6.34	80.12	2.26	"	46.8	46.5	4.08
	6	26649	9.96	6.06	83.98	4.84	"	43.3	43.0	1.22
	7	26650	6.70	2.74	90.50	1.12	"	48.5	48.5	1.62
	8	26651	9.84	3.44	86.72	2.26	"	47.5	46.6	1.18
	9	26652	10.40	5.64	83.96	3.74	"	44.8	44.5	1.90
	10	26653	9.84	6.80	83.86	2.89	"	47.0	46.2	3.41
	11	26654	9.96	5.80	84.24	3.74	"	45.5	45.5	2.06
	12	26655	11.44	7.50	81.06	2.26	"	47.0	47.1	5.24
	13	26656	8.60	5.36	86.04	3.40	"	46.5	46.5	1.96
	14	26657	9.14	7.34	83.52	4.10	"	47.0	46.8	3.24
	15	26658	13.20	6.20	80.60	3.63	"	46.3	46.3	2.57
	16	26659	14.06	4.16	81.78	1.70	"	46.1	45.9	2.46
	17	26660	8.50	6.70	84.80	4.33	"	46.2	46.0	2.37
	18	26661	14.68	6.00	79.32	1.64	Borax..	46.2	46.0	*4.36
	19	26662	10.72	4.60	84.68	2.72	None..	46.7	46.5	1.88
	20	26663	5.46	4.04	90.50	1.79	"	47.0	46.2	2.25
Kingston	1	25472	3.68	3.58	92.74	2.85	"	48.5	48.0	0.73
	2	25473	8.64	3.30	87.96	2.15	"	48.5	48.5	1.15
	3	25474	7.12	3.12	89.76	2.63	"	49.5	49.5	0.49
	4	25475	7.48	2.94	89.58	2.09	"	48.3	48.0	0.85

*Borax included with curd.

TABLE II--DOMESTIC BUTTER--JULY, 1905--Continued.

Curd.	District.	Serial Number.	Collector's Number	Water.	Non-fat Solids.	Fat.	Sodium Chloride.	Borax or Boracic Acid.	REFRACTOMETER.		Curd.
									Normal.	Found.	
p.c.				p.c.	p.c.	p.c.	p.c.				p.c.
5 3.54	Kingston--Con	5	24851	11.08	4.00	84.92	2.12	None..	46.8	46.8	1.88
8 2.20		6	25477	11.22	4.82	83.96	3.23	"	45.6	45.6	1.59
9 1.95		7	25478	7.80	9.60	82.60	8.50	"	45.2	45.7	1.10
9 1.41		8	25479	8.86	4.10	87.04	2.12	"	46.2	45.0	1.98
0 1.51		9	25480	10.68	2.92	86.40	2.72	"	46.7	46.5	0.20
9 1.78		10	25481	9.68	3.80	86.52	3.11	"	47.0	47.0	0.69
0 0.92		11	25482	12.08	8.14	79.78	4.20	"	46.7	48.5	3.94
0 1.38		12	25483	13.36	6.92	79.72	4.00	"	46.4	46.1	2.92
9 0.94		13	25489	15.34	3.72	80.94	1.56	"	47.5	47.1	2.16
0 3.76		14	25490	11.18	1.96	86.86	1.03	"	47.1	46.7	0.93
1 1.30		15	25491	11.40	3.80	84.80	2.51	"	47.2	47.0	1.29
0 0.80		16	25492	13.40	4.26	82.34	3.13	"	47.4	47.5	1.13
0 0.56		17	25493	8.64	5.64	85.72	4.25	"	48.8	48.8	1.39
0 2.55		18	25494	12.14	4.40	83.46	1.87	"	47.3	46.5	2.53
0 3.31		19	25495	10.52	7.36	82.12	4.59	"	46.0	46.5	2.77
5 1.70		20	25496	8.44	4.50	87.06	3.14	"	49.8	49.8	1.36
0 0.83	Toronto.....	1	24840	8.68	4.80	86.52	4.25	"	49.5	50.0	0.55
7 2.35		2	24841	9.06	4.80	86.14	2.63	"	47.4	47.8	2.17
0 1.45		3	24842	10.00	6.34	83.66	4.67	"	47.6	47.0	1.67
0 2.76		4	24843	9.64	4.00	86.36	2.29	"	46.4	47.0	1.71
2 2.16		5	24844	10.06	6.82	83.12	5.61	"	46.4	46.0	1.21
0 1.82		6	24845	10.00	4.00	86.00	3.03	"	46.4	46.0	0.97
0 1.21		7	24846	13.68	4.04	82.28	3.11	"	46.4	47.0	0.93
2 1.60		8	24847	9.76	7.29	83.04	4.93	"	48.3	49.6	2.27
9 1.30		9	24848	11.14	5.00	83.86	1.87	"	46.4	46.0	3.13
6 1.50		10	24849	10.28	4.64	83.08	3.58	"	45.3	45.0	1.06
4 2.00		11	24850	9.16	6.48	84.36	5.69	"	44.6	44.0	0.79
3 0.44		12	25476	7.40	4.00	88.60	2.38	"	45.0	44.9	1.62
0 1.08		13	24852	8.96	5.60	85.44	2.97	"	49.0	49.0	2.63
0 0.74		14	24853	10.24	4.28	85.48	3.23	"	49.1	48.8	1.05
7 0.70		15	24854	11.00	3.68	85.32	2.28	"	49.8	49.0	1.40
0 1.20		16	24855	8.80	6.34	84.86	5.52	"	48.8	48.5	0.82
7 2.09		17	24856	13.16	5.20	81.64	4.81	"	48.0	48.0	0.39
2 0.69		18	24857	9.40	7.18	83.42	2.46	"	48.4	48.0	4.72
7 0.79		19	24858	10.42	4.00	85.58	2.46	"	48.0	48.5	1.54
0 0.11		20	24859	8.86	4.36	86.78	3.82	"	47.0	47.0	0.54
7 1.20	London	1	22300	9.74	2.80	87.46	1.87	"	49.7	49.0	0.93
1 1.60		2	22305	8.26	2.10	89.64	1.87	"	49.4	49.0	0.23
6 0.60		3	22302	4.78	3.26	91.96	1.98	"	47.4	47.0	1.28
7 2.92		4	22297	9.44	4.80	85.76	4.50	"	49.8	49.0	0.30
6 0.60		5	22310	11.68	5.60	82.72	4.76	"	48.7	48.0	0.84
7 6 1.23		6	22313	8.20	4.60	87.20	2.55	"	47.8	48.5	2.05
6 0.88		7	22318	4.96	3.40	91.64	2.38	"	47.3	46.0	1.02
6 0.25		8	22321	6.36	7.34	86.30	6.80	"	48.7	48.5	0.54
6 5 4.08		9	22323	5.62	4.00	90.38	3.33	"	47.3	47.0	0.67
13 0.122		10	22327	3.94	4.44	81.62	3.87	"	46.4	44.9	0.57
18 5 1.62		11	22334	6.06	3.70	90.22	1.62	"	48.0	48.0	2.08
16 6 1.18		12	22342	5.96	3.62	90.42	1.45	"	48.4	48.0	2.17
14 5 1.90		13	22345	6.44	4.00	89.56	1.70	"	48.2	48.0	2.30
16 2 3.41		14	22347	8.88	4.14	86.98	2.12	"	48.6	48.0	2.02
45 5 2.06		15	22351	7.78	4.76	87.46	2.97	"	46.4	45.5	1.79
47 1 5.24		16	22354	9.56	5.84	84.60	2.89	"	44.0	42.9	2.96
46 5 1.96		17	22356	9.72	10.44	79.84	9.01	"	48.7	49.0	1.43
46 8 5.24		18	22359	9.20	5.76	85.04	5.01	"	46.8	46.5	0.75
46 3 2.57		19	22363	9.56	4.40	88.04	3.14	"	45.0	45.0	1.26
45 9 2.46		20	22365	8.76	5.72	85.62	4.16	"	45.4	45.0	1.56
46 0 2.37	Winnipeg	1	25524	7.86	5.40	86.74	3.38	"	49.0	48.8	2.02
46 5 4.36		2	25528	11.82	4.70	83.48	1.86	"	48.8	48.5	2.84
46 5 1.88		3	25529	5.32	9.16	85.52	7.62	"	49.1	49.1	1.54
46 2 2.25		4	25533	9.90	6.94	83.16	5.02	"	48.5	48.0	1.92
48 0 0.73		5	25534	6.82	3.50	89.68	1.74	"	46.6	46.1	1.76
44 1 1.15		6	25535	10.56	4.00	85.44	1.24	"	44.8	43.5	2.76
49 5 0.49		7	25537	7.40	2.80	89.80	1.68	"	48.2	47.5	1.12
48 0 0.85		8	25539	11.96	2.60	85.44	1.40	"	49.4	49.1	1.20
		9	25541	8.10	10.90	81.00	9.10	"	46.9	46.5	1.80